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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 646,032	11 30 2000	William Eccleston	THOM-0012	2261

7590 03 13 2005

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EXAMINER

YUN, JURIE

ART UNIT PAPER NUMBER

2882

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/646,032	ECCLESTON ET AL.
Examiner	Art Unit	
Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 December 2000.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 November 2000 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                           | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because it should consist of only one paragraph. Correction is required. See MPEP § 608.01(b).

### ***Drawings***

2. Figure 10 is objected to under 37 CFR 1.83(a) because it fails to show (column 15, lines 17-21):

"A female mould, seen at 100 in Fig. 10, is then pressed against the upper surface of the polymer 102. In Fig. 10, the substrate is seen at 104. Polymers can be well suited to moulding processes. In the illustrated embodiment, the mould is shaped to form in the polymer a number of emission tips 106."

as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.2(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 18-20, 23, 24, 29, 31, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Angelopoulos et al. (EP 0 399 299 A2).

5. With respect to claims 18-20, Angelopoulos et al. disclose a field emission cathode comprising a polymer material forming a field emission surface. Angelopoulos et al. also disclose the polymer material is a conjugate polymer material; and wherein the conjugated polymer material is a substituted polythiophene (page 3, lines 48-56 and page 5, lines 1-12).

6. With respect to claims 23 and 31, Angelopoulos et al. disclose the conjugated polymer material is formed as a polymer layer on a substrate (page 4, lines 14-16).

7. With respect to claims 24 and 32, Angelopoulos et al. disclose the polymer layer is formed from a polymer solution including a solvent, which is distributed on the substrate, the solvent being evaporated to leave behind the polymer layer (page 4, lines 7-13).

8. With respect to claim 29, Angelopoulos et al. disclose the conjugated polymer material is doped with an electron donor material (page 5, lines 1-12).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al. (USPN 5,548,185) and further in view of Angelopoulos et al. (EP 0 399 299 A2).

11. With respect to claim 30, Kumar et al. disclose a field emission display (Fig. 2) comprising: a field emission cathode (170) forming a field emission surface; a first anode (102) separated from the field emission cathode such as to be capable of causing field emission therefrom; a second anode (104) positioned beyond the first anode; and a luminescent screen (120), wherein electrons are selectively emitted from the field emission cathode under the influence of the first anode then accelerated onto the screen with sufficient energy to cause it to luminesce by the second anode. Kumar et al. do not disclose the field emission cathode comprises a conjugated polymer material. Angelopoulos et al. disclose this (page 3, lines 48-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kumar et al. invention and disclose the field emission cathode comprises a conjugated polymer material, as taught by Angelopoulos et al. As disclosed by Angelopoulos et al., this is easier to remove than metal (page 2, lines 38-50).

***Allowable Subject Matter***

12. Claims 21, 22, 25-28, 33, and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
13. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to disclose the conjugated polymer material comprises a polyalkylthiophene and/or poly-3-octylthiophene. Prior art fails to disclose the solvent is evaporated under vacuum. Prior art fails to disclose the polymer layer includes voids

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which are formed by solvent evaporation. Prior art fails to disclose the polymer layer is shaped by use of a mould.

***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 703 308-3535.

The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.

Jurie Yun  
February 25, 2003

